Energy Policy Update

Energy and Environmental News

August 12, 2013

This newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international and domestic energy and environment-related publications reviewed by the Education and Community Outreach personnel. For inquiries, call (602) 771-1143 or toll free (800) 352-5499. Compiled and edited by Gloria Castro, Special Projects Coordinator. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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For your convenience, Arizona-related titles are highlighted in blue.

ARIZONA

AECOM Picked for Environmental Study of Navajo Plant & Coal Mine

[Power Engineering, Aug. 7] The U.S. Department of the Interior's Bureau of Reclamation picked AECOM to prepare a third-party environmental impact statement for the continued operation of the Navajo coal-fired power plant and Kayenta Mine Complex, operated by the Salt River Project and Peabody Western Coal Co., respectively. The operation of the plant and mine require compliance with dozens of federal and tribal regulations, and jurisdictional approvals from approximately 10 cooperating government agencies. AECOM will work with Reclamation, the Office of Surface Mining Reclamation and Enforcement, Bureau of Indian Affairs and other cooperating federal agencies. The company will analyze and document the critical technical and public issues, including potential impacts to human health, air and water quality, regional visibility, endangered species and other biological resources.

A Ranking of the Most Solar-Friendly States in the Country

[NASEO website, Aug. 7] The Environment America Research and Policy Center has released a new report that highlights the top 12 solar states in the United States. These 12 states represent 85% of the nation's installed solar electricity capacity, but only 28% of the population. The 12 states are Arizona, California, Colorado, Delaware, Hawaii, Maryland, Massachusetts, Nevada, New Jersey, New Mexico, North Carolina, and Vermont.

Computerized Irrigation Cuts Energy Expenditures, Other Costs for Town of PV

[The Daily Courier, Aug. 9] The Town of Prescott Valley's new computerized irrigation system is performing above expectations, according to parks employee Nick Groblewski. Seven town parks are now connected to the computerized system, Groblewski said. Between January 2013, when the system came online, and June 2013, the water savings was 2.8 million gallons when compared to the same time period in 2012, he said. That equates to $11,116 in four months. Water conservation is just one benefit. "There is significant time and gasoline savings over the older system, which required physically driving to each park and conducting manual checks. Now, we receive electronic updates on the system status and can adjust the system remotely using our smartphones," Groblewski said. "It really is a major improvement and benefit to our parks." Water Resources Manager John Munderloh oversees the town's water conservation efforts, and reports to the Arizona Department of Water Resources on conservation-related improvements that the town instituted.

Project Delay Costs First Solar Profit, But GE Deal May Boost Company

[Phoenix Business Journal, Aug. 6] First Solar Inc. is going into a partnership with General Electric, a move that could boost the solar manufacturer's presence and provide it with more capital going forward. The deal was announced Tuesday, the same day Tempe-based First Solar (Nasdaq: FSLR) released its earnings that showed a lower second-quarter profit and revenue due to some delayed deals.

REC Solar Expanding Offices in Scottsdale, Will Hire More Than 100

[Phoenix Business Journal, Aug. 7] While the solar industry in Phoenix and Arizona is in flux with several potential hurdles coming up, REC Solar has decided to expand its Scottsdale office and hire upwards of 100 employees. The San Luis Obispo, Calif.-based installer was one of the first major companies to set up operations in Arizona once incentives and the states renewable energy standard rolled out. The company is moving into new Scottsdale offices for sales and will hold a career fair on Aug. 15 to begin hiring for its sales office. Currently the company has 67 employees in the state and will add another 75 to 100 during the next year. Those positions will be outside and inside sales as well as field marketing.

Solar Panels Provide Power Savings at CV Schools

[Chino Valley Review, Aug. 7] "Win-win situation" may be a cliché, but it well describes the partnership the Chino Valley School district has entered into with Solar City and Arizona Public Service to supply solar power to four area schools. Chino Valley Schools Director of Support Services John Scholl said the solar project, which has been in the works for more than a year, will not only save the district $715,000 over 20 years but includes a side benefit of covered parking at all four schools, and will cost the schools nothing. At Chino Valley High School, the Solar City company has made use of APS incentives to install the panels atop covered parking structures. Scholl said the district's agreement with Solar City is to buy all of the electricity the panels generate at a substantially discounted rate compared to what it now pays APS.

Feds, White Mountain Apaches Sign 'Historic' Water-Rights Pact

[Cronkite News, July 30] WASHINGTON – The federal government and White Mountain Apache tribe signed a "historic" water-rights agreement Tuesday that the two sides said will guarantee water for the tribe and benefit Phoenix water users as well. The deal ends decades of legal wrangling over rights to water from the Little Colorado and Gila rivers by allocating about 23,000 acre-feet of water from the Central Arizona Project to the tribe each year. It also includes $200 million for construction of a new water system for the tribe and an additional $78.5 million for fish production, lakes, irrigation and other water projects.

First Solar Buys 1.5 GW Solar Energy Pipeline

[Electric Light & Power, Aug. 6] First Solar bought a 1.5 GW pipeline of U.S. and Mexico development assets from Element Power. The 1.5 GW pipeline includes geographically diverse projects in various stages of development. Terms of the deal were not disclosed. Included in the pipeline are projects in California, Arizona, Texas, Georgia, North Carolina, Colorado, Louisiana and Illinois. The projects have secured site options and interconnect queue positions, and are at various stages of environmental screening and permitting.

First Solar Buys GE's Intellectual Property for Nearly $84M

[Az Republic, Aug. 6] Tempe-based First Solar Inc. said Tuesday it bought the intellectual property of competitor General Electric for $83.8 million in stock, and plans to partner with the company to develop its

solar panels cheaper and with a higher capacity to generate electricity. First Solar faced a well-funded competitive threat when General Electric bought a smaller rival called PrimeStar Solar in 2011. GE soon announced it would begin manufacturing solar panels in Colorado using the same materials that make First Solar's the least expensive in the industry. First Solar uses a semiconductor of cadmium telluride to turn sunlight into electricity. Traditional solar panels use silicon to make electricity. Its "thin-film" solar panels are lighter and thinner than traditional solar panels, but they also make less electricity per square foot, so they require more space. First Solar executives said they expect a quick payback on the investment.

Net Metering Battle Heats Up in Arizona

[Energy Prospects West, Aug. 6] Arizona Public Service gave the Arizona Corporation Commission the opportunity to revamp the state's net-metering policies when it filed a proposal in July to change compensation for its future solar rooftop customers. Solar advocates and utilities across the country are watching to see if Arizona regulators will dismantle the current net-metering paradigm. Cave Creek, Ariz., a town north of Phoenix, voted unanimously July 15 to urge the ACC to maintain its present net-metering policy, becoming the state's first municipality to take such an action. "APS is looking to yank the rug from the bottom of the solar industry in the state, which is not good for Cave Creek because we have a lot of solar installations," town councilman Ernie Bunch said in an interview on Arizona Public Television. "Solar is the most expensive resource we have," and "without getting the kickback, why would anyone put those systems on their homes?" he added. While he voted for the resolution, Bunch said he was conflicted on the issue. "Public opinion has caused APS and other utilities across the country to do things that are not in their best interest," he said. "APS has a legitimate argument, but I don't believe the two ideas they sent to the ACC are all that should be there. What APS sent to the ACC was their prayer, and they are hoping their prayer will be answered, but a reasonable solution lies somewhere in the middle." APS proposed two alternatives for the ACC's consideration: a net-metering option, wherein future solar rooftop customers would pay a charge for their use of the grid, based on how much electricity they use, and a bill credit option, which would replace net metering with a credit to customers for the energy they generate at **a price set by the ACC**.

Sun Tran: Pioneering Sustainability in Arizona

[Metro Magazine, July 30] Transit agencies across the country are looking for ways to cut emissions, reduce petroleum use and save on fuel costs. Sun Tran, operated by the City of Tucson, Ariz., has been successful on all three fronts and serves as a great example for other public transit providers. Sun Tran services approximately 20 million passenger trips annually to destinations in and around Tucson. The agency has 253 buses in its fleet, all of which are wheelchair accessible and bike-rack equipped. The agency is strongly committed to maintaining a safe and clean environment, preventing pollution and preserving the Tucson community's natural desert resources. Sun Tran began experimenting with alternative fuels in 1987 in response to growing concerns over air quality. The agency converted a 35-foot bus to use both compressed natural gas (CNG) and diesel fuel — one of the first such buses in the country. The city installed its own time-fill CNG fueling infrastructure, and by 1997, almost one-half of Sun Tran's fleet ran on CNG. In 1998, Sun Tran signed on as one of the first member organizations in the Tucson Clean Cities Coalition, joining together with other fleets, agencies, and businesses committed to pursuing and/or expanding use of alternative fuels. Over the course of the last 15 years, Sun Tran has continually strengthened its commitment to providing sustainable public transit. Today, 100% of the Sun Tran fleet uses clean-burning fuels or fuel-saving technologies, including biodiesel, hybrid-electric drive systems and CNG. So far during FY13, Sun Tran estimates it has saved more than $700,000 in fuel costs and averted 800 tons of greenhouse gas emissions through its use of these fuels and technologies. And, the agency shows no signs of slowing: It recently purchased 10 diesel-electric hybrid buses and has plans in place to acquire 45 new dedicated CNG transit buses.

ALTERNATIVE ENERGY AND EFFICIENCY

EDF Seeks Data for Energy Efficient Buildings Finance Project

[Energy Manager Today Staff, Aug. 6] The Environmental Defense Fund's Investor Confidence Project, and the Clean Energy Finance Center in partnership with state and local lending programs, financial organizations, and other stakeholders, have begun a process of collecting, aggregating and analyzing loan performance and energy savings data from energy efficiency retrofits in residential and commercial buildings. EDF says that the Energy and Loan Performance Data Project represents the first concerted effort to combine

data from some of the largest US energy efficiency programs in an attempt to develop an actuarially significant dataset to help engage the capital markets. Banks and credit agencies rely on rigorous historical loan performance data in making lending decisions, according top the organizations. Since energy efficiency investing is in the early stages, there is limited historical loan performance data, and what does exist is not aggregated or standardized. Additionally, a wide array of investors including building owners, energy service companies, insurance providers and even utilities are struggling to ensure savings are delivered and lack the clear data and replicable protocols necessary to accurately underwrite loans, according to the organizations.

EPA Screens More Than 66,000 Contaminated Sites for Renewable Energy Potential

[U.S. EPA website, Aug. 5] WASHINGTON **–** Today, the U.S. Environmental Protection Agency (EPA) updated its RE-Powering Mapping and Screening Tool, which will now provide preliminary screening results for renewable energy potential at 66,000, up from 24,000, contaminated lands, landfills, and mine sites across the country. The RE-Powering America's Land Initiative, started by EPA in 2008, encourages development of renewable energy on potentially contaminated land, landfills and mine sites when it is aligned with the community's vision for the site. "We see responsible renewable energy development on contaminated lands and landfills as a win-win-win for the nation, local communities, and the environment," said Mathy Stanislaus, assistant administrator for the Office of Solid Waste and Emergency Response. "In President Obama's Climate Action Plan, the administration set a goal to double renewable electricity generation by 2020. By identifying the renewable energy potential of contaminated sites across the country, these screening results are a good step toward meeting national renewable energy goals in order to address climate change, while also cleaning up and revitalizing contaminated lands in our communities." Pulling from EPA databases of potentially and formerly contaminated lands, as well as partnering with state agencies from California, Hawaii, Oregon, Pennsylvania, New Jersey, New York, West Virginia, and Virginia, the RE-Powering Initiative expanded the universe of sites from 24,000 to more than 66,000 sites. Working in collaboration with the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), RE-Powering developed screening criteria for solar, wind, biomass, and geothermal potential at various levels of development. The sites are tracked by EPA and selected state agencies.

Green Buildings Are Fueling a Return to Traditional Materials and Methods

[Navigant Research, July 29] As more and more construction projects seek green building certification or otherwise strive for exemplary environmental performance, demand is growing for materials that, by virtue of their inputs, manufacturing processes, and in-use performance, reduce the environmental impacts associated with the buildings sector. One result, according to a recent report from Navigant Research, is that the buildings industry is making greater use of traditional materials and methods that have been superseded over the past several decades by materials science and building design driven by inexpensive fossil fuels and petrochemicals. "Innovation in green materials is driving, in a sense, a regression, in which materials made from bio-based or quickly regenerating resources that are low in embodied energy and carbon, are re-emerging," says Eric Bloom, senior research analyst with Navigant Research. "Examples include timber structures and cladding, straw-bale construction, lime renders and mortars, cellulose insulation, bamboo flooring, and natural mineral and fiber floor coverings." In addition, advanced production technology and research and innovation in materials science are also contributing to the growth and versatility of green building materials. This applies to many incumbent products, where process efficiency is driving material advances and reductions in embodied impacts, according to the report. In other product classes, advanced technology in areas such as energy or process conversion (e.g., photovoltaics, thermochromic and electrochromic glass and windows, heat exchange systems, and electronically controlled drives and motors) is making advanced building design and performance both possible and affordable.

LED Street Light Costs $99, Uses 65% Less Energy

[Energy Manager Today, Aug. 8] Cree says its new XSPR LED residential street light consumes 65 percent less energy than high-pressure sodium fixtures up to 100 watts. At an initial cost as low as $99 for common applications, the street light can deliver payback in less than one year for municipalities and cities. The payback is calculated against high-pressure sodium and based on municipal usage of 12 hours per-day and the national average of $0.11 per kWh electric costs. The 25-watt and 42-watt XSPR street light is designed to replace up to 100-watt high-pressure sodium street lights. According to Dan Howe, assistant city manager for the City of Raleigh, NC, street lighting is the city's largest single energy-related cost.

ENERGY/GENERAL

10 Years After Blackout, US Grid Faces New Threats

[Associated Press, Aug. 10] The U.S. electrical grid is better managed and more flexible a decade after its largest blackout but remains vulnerable to increasingly extreme weather, cybersecurity threats, and stress caused by shifts in where and how power is produced. Many worry the grid isn't fully prepared for the new and emerging challenges, even though an analysis conducted for The Associated Press shows maintenance spending has steadily increased since North America's largest blackout. "This job of reliability is kind of impossible, in the sense that there's just so many things that could happen that it's hard to be sure that you're covering all the bases," said William Booth, a senior electricity adviser with the U.S. Energy Information Administration. The industry has mostly addressed the failures blamed on a tree branch in Ohio that touched a power line and set off outages that cascaded across eight states and parts of Canada the afternoon of Aug. 14, 2003, darkening computer screens, halting commuter trains, and cutting lights and air conditioners for 50 million people. Grid operators who didn't initially realize what was happening now have a nearly real-time view of the system and are better equipped to stop problems from growing. Utilities share more information and systematically trim trees near high-voltage power lines.

Convergence Point: Threats to the Utility Business Model

[Fierce Energy, Aug. 5] *By Matthew Burks, Kenneth Black, and Tim Stout* – The U.S. electric generation and delivery system is one of the most impressive technical feats in human history. Over the past century, utilities have delivered increasingly low-cost and reliable electricity to nearly every home and business across the nation; however, the energy ecosystem is at a profound convergence point. Technological, regulatory, financial, and social forces are fundamentally reshaping the electric and gas delivery and business models. **Growing Threats** – Utilities face a growing number of internal and external threats. Anemic sales, environmental regulations, inexpensive natural gas, grid reliability and resiliency concerns, massive impending infrastructure expenses, reduced bond ratings, eroding Wall Street confidence, competitive threats from distributed energy resources (DER), and an aging workforce are all conspiring to increase utility rates and create an unsustainable economic future. Although it's tempting to discount these issues as news headlines rather than realities, the disturbing truth is that every one of them is an existing or near-term threat. A multitude of factors currently drive weak electricity sales, including aggressive up- and downstream state and regional efficiency initiatives, residual pressures from the economic downturn, changing demographics, and stagnant population growth for many regions of the country. Electric vehicles and plug loads provide some hope, but long-term US Energy Information Administration growth estimates remain sobering, regardless of reference year and external inputs. At the same time, utilities face looming expenses from an aging electric and gas generation and delivery infrastructure. Roughly 60,000 to 100,000 MW of the U.S. coal-fired generation fleet will be shuttered, dismantled, or mothballed due to age, increased environmental standards, and competition, most notably because of the abundance of natural gas, according to Reuters. Distribution system upgrades will cost an estimated $107 billion by 2020, on top of an estimated $95 billion in grid modernization projects, according to research from ASCI. President Obama's recent bold public commitment to counter climate change accelerates a trend of increasingly restrictive air, water, and carbon requirements that are driving utilities away from traditional coal inputs.

Report: Small Modular Reactors Face Uphill Battles

[Sustainable Business Oregon, Aug. 8] new report suggests that small modular reactor projects would require massive order volumes, involvement from Chinese companies and large taxpayer subsidies in order to be viable. The Institute for Energy and Environmental Research, a Washington, D.C. think tank, called out Corvallis's NuScale Power among projects in seven states that would "likely require tens of billions of dollars in federal subsidies or government purchase orders, create new reliability vulnerabilities, as well as serious concerns in relation to both safety and proliferation." The report is called "Light Water Designs of Small Modular Reactors: Facts and Analysis," and focuses on light water reactor designs. NuScale has put in for tens of millions of Department of Energy funds in order to back its small modular reactor developments. NuScale's small modular reactors feature "first-of-its-kind passive safety design, years of real-world testing of its technology and almost 100 patents," according to the company. The company is also working with Oregon and other Western states on a demonstration project that will study the "deployment of safe, affordable nuclear energy" from small modular reactors. The IEER report suggests that it would require $90 billion in initial orders for small modular reactors to pencil out.

Use of Coal Power Plants Rises With Natural Gas Prices

[Charlotte Business Journal, Aug. 8] With natural gas prices rising — spot prices are now $1 or more per million BTUs than prices a year ago — coal is rebounding a bit as a fuel for producing electricity, say two Charlotte CEOs in the energy industry. Jim Ferland, CEO of Babcock & Wilcox (NYSE:BWC)cited statistics that show coal produced 39% or the electricity in the United States for the first six months of this year. That up from 35% for the same period a year ago, when natural gas prices frequently dipped below $2 per million BTUs. Prices that low had not been seen since 1999. And with prices low throughout 2012, utility companies across the country — Duke Energy (NYSE:DUK) included — dispatched power from natural gas plants ahead of coal plants

INDUSTRIES AND TECHNOLOGIES

GE's First Solar Deal Comes Amid Oil and Gas Push

[Investor's Business Daily, Aug. 7] General Electric's (GE) deal to shift production of solar panels to First Solar (FSLR) comes as the industrial conglomerate expands its energy focus to the oil and gas market. GE has been pushing a green image, emphasizing renewable energy segments like wind, but the company's oil and gas division is its fastest growing one. GE shares dipped less than 1% in the stock market today. First Solar's shares were sinking more than 13%, a day after reporting disappointing Q2 results. In April, GE bought Lufkin Industries, a provider of equipment for oil-and-gas platforms, for about $3.3 bil. The Lufkin deal is the latest in a string of related acquisitions for GE, which has spent $11 billion expanding its reach in the industry since 2007. During Q2, GE's oil and gas orders grew 24% to $5 billion. Equipment orders jumped 42% to $2.8 billion with double-digit growth in all areas, helped by projects in the U.S., Indonesia and Angola. The boom in GE's oil and gas growth comes as fracking sweeps the U.S., especially in the mid-Atlantic, Texas and the Dakotas. But with controversy around the extraction method growing more heated, GE unveiled a $100 million research center in Oklahoma in April focused on "technologies that enable safe, efficient and reliable production, delivery and use of unconventional oil and gas," according to the company.

U.S. Wind Power Fastest-Growing Energy Source in 2012, Report Says

[LA Times, Aug. 6] In a first, wind energy became the No. 1 source of new U.S. electricity generation capacity in 2012, according to a report released by the Energy Department on Tuesday. Wind energy accounted for 43% of new electric additions last year, adding more than 13 gigawatts of new wind power capacity to the U.S. grid, the report said. That's double the capacity installed the year before. But Energy Department officials warn that future growth is uncertain and they are urging an extension of production tax credits that have helped spur wind energy production and manufacturing. “The tremendous growth in the U.S. wind industry over the past few years underscores the importance of consistent policy that ensures America remains a leader in clean energy innovation,” Energy Secretary Ernest Moniz said in a statement. Nonetheless, officials say they are committed to expanding renewable energy production under President Obama's so-called Climate Action Plan.

Waste-Heat Startup Scores DOE Grant

[Energy Prospects West, Aug. 6] A Colorado startup has been awarded a $1-million grant from the Department of Energy's Phase II Small Business Innovation Research program to complete design of technology that generates electricity from waste heat in oil and gas fields. **Boulder-based Cool Energy Inc.** will use the grant to complete the design of its 20-kW GeoHeart Engine, which will be built in the next nine to 12 months and pilot-tested in an oil or gas field to be selected by the DOE. Cool Energy's technology uses a Stirling engine to generate emissions-free electricity from the recoverable heat found in co-produced liquids at oil and gas wells, from geothermal heat in spent wells, and waste heat produced by the machinery that runs those operations.

LEGISLATION AND REGULATION

EPA Finalizes 2013 Renewable Fuel Standards To Help Promote American Energy Independence, Reduce Carbon Pollution/EPA Also Announces Steps To Address Concerns About the E10 Blend Wall

[U.S. EPA website, Aug. 6] WASHINGTON – As part of an ongoing effort to enhance energy security and reduce carbon pollution, the U.S. Environmental Protection Agency (EPA) today finalized the 2013

percentage standards for four fuel categories that are part of the Renewable Fuel Standard (RFS) program established by Congress. Most of these fuels are produced by American farmers and growers domestically and help reduce the carbon pollution that contributes to climate change.

EU Pursues Probe of Chinese Solar Subsidies

[Associated Press, Aug. 7] BRUSSELS – The European Union is pressing ahead with an investigation of whether China unfairly helps its solar panel makers with government subsidies. The European Commission, the 28-nation bloc's executive arm, had only days ago agreed to a settlement over China's alleged practice of selling its panels below cost, a practice known as dumping. But complaints over Beijing's alleged state subsidies were never settled. In this ongoing probe, the EU said Wednesday it will determine by the end of the year whether punitive anti-subsidy duties are required

Obama Aims To Fast-Track New Wave of Renewables Projects

Seven major clean energy projects will be expedited through government permitting processes

[Guardian Environment Network, Aug. 9] The Obama administration has this week handed a major boost to America's renewable energy sector, announcing plans to fast-track planning and permitting decisions for a new wave of utility-scale wind and solar projects. The Office of Management and Budget confirmed that in response to a Presidential Executive Order issued in March this year tasking officials with speeding up planning decisions for key infrastructure projects, seven major clean energy projects planned for Arizona, California, Nevada and Wyoming would be expedited through government permitting processes. The six utility-scale solar projects and one wind farm could combined deliver nearly 5GW of renewable energy capacity, providing enough clean power for about 1.5 million homes. "As part of President Obama's all-of-the-above strategy to expand domestic energy production and strengthen the economy, we are working to advance smart development of renewable energy on our public lands," said Secretary of the Interior Ken Salazar in a statement. "These seven proposed solar and wind projects have great potential to grow our nation's energy independence, drive job creation, and power economies across the west." The proposed projects include a number of high-profile developments, such as BP Wind's 425MW Mohave County Wind Farm in Arizona, which is now scheduled to receive federal permit and review decisions by January next year, and NextEra's 750MW McCoy Solar Energy Californian solar PV project, which has been promised a planning decision by the end of this year. The Obama administration stressed that the streamlining of the planning process was part of a renewable energy strategy that had already seen more utility-scale clean energy projects on public lands approved in the past three years than had been approved in the previous 20 years. The announcement comes in the same week as the Department of the Interior also signed a memorandum of understanding with the Department of Defense intended to identify new areas of military land that can be used for renewable energy generation.

New Study Finds that the Price of Wind Energy in the United States Is Near an All-Time Low But Continued Federal Policy Uncertainty and Low Natural Gas Prices Create Headwinds for the Sector

[Power Engineering, Aug. 7] The U.S. Department of Energy's Lawrence Berkeley National Laboratory issued the following news release: Annual wind power additions in the United States achieved record levels in 2012, while wind energy pricing is near an all-time low, according to a new report released by the U.S. Department of Energy and prepared by Lawrence Berkeley National Laboratory (Berkeley Lab). Roughly 13.1 gigawatts (GW) of new wind power capacity were connected to the U.S. grid in 2012, well above the previous high in 2009, and motivated by the scheduled expiration of federal tax incentives at the end of 2012. The prices offered by wind projects to utility purchasers averaged $40/MWh for projects negotiating contracts 2011 and 2012, spurring demand for wind energy. At the same time, even with a short-term extension of federal tax incentives now in place, the wind power industry is facing uncertain times, in part due to low natural gas prices and continued policy uncertainty.

WESTERN POWER

ETT Energizes Transmission Lines for Renewable Energy in Texas

[Power Engineering, Aug. 6] Electric Transmission Texas LLC (ETT) has energized a 41.6 mile transmission line associated with the Competitive Renewable Energy Zone (CREZ) in west Texas. The 345 kV line is the first of seven in the area. The Riley to Edith Clarke transmission line and the Edith Clark switching station represents about $141.5 million of ETT's $1.5 billion investment in CREZ, according to the company. The line,

which provides power to the Electric Reliability Council of Texas grid, runs from the Vernon area in Wilbarger County to the Crowell area in Foard County. Eight different transmission service providers will construct 2,400 miles of transmission lines as part of the CREZ initiative. These lines will be used to carry 18,500 MW of wind power generated in west Texas to eastern load centers in ERCOT. The projects are scheduled for completion by the end of 2013.

In a Utah Gas Field, Potent Quantities of Greenhouse Gas Rise into Atmosphere

A new study reveals that Utah's lax laws have led to large leaks of natural gas

[Scientific American, Aug. 7] Methane is being emitted from a natural gas field in Utah at a rate of 6.2 to 11.7 percent of production, according to research accepted for publication in the journal *Geophysical Research Letters*. The research adds one important data point to the ongoing question of how much methane, a greenhouse gas with a warming potential 25 times that of carbon dioxide, is emitted in the life cycle of natural gas production, transport and use. It was conducted by a team of scientists at the University of Colorado, Boulder, the Cooperative Institute for Research in Environmental Sciences (CIRES) and the National Oceanic and Atmospheric Administration's Earth System Research Laboratory. Study co-author Colm Sweeney pointed out the discrepancy between the emissions rate his research team measured and what U.S. EPA has said it estimates as an emissions rate for the natural gas production sector.

Top Vegas Water Official Talking Drought Disaster

[Associated Press, Aug. 9] LAS VEGAS — The top water official in Las Vegas is floating the idea of seeking federal disaster aid to deal with ongoing drought and decreasing water levels at the Colorado River reservoir that provides most of Sin City's water. With federal water managers due next week to release Lake Mead water level forecasts, Southern Nevada Water Authority chief Pat Mulroy told the Las Vegas Review-Journal that she thinks drought could hurt the Southwest as much as Superstorm Sandy did the Atlantic seaboard in 2012. "This is as much an extreme weather event as Sandy was on the East Coast," Mulroy told the newspaper. "Does a drought not rise to the same level as a storm? The potential damage is just as bad." Authority officials said Thursday that no formal disaster aid request had been submitted. The vast Lake Mead reservoir behind Hoover Dam provides almost all of the water supply for more than 2 million residents and hundreds of thousands of tourists a year in and around Las Vegas. Drought has dropped the lake water level more than 100 feet since 2000. The lake, with a surface elevation of 1,106 feet above sea level on Thursday, was still almost half full, at 47 percent, a federal Bureau of Reclamation spokeswoman said. But it has been getting closer to the 1,075-foot trigger for water supply cuts for Nevada and Arizona. Bureau officials plan to post a two-year projection Aug. 16 for managing Colorado River water between the Lake Powell reservoir upstream and Lake Mead.

Western Utilities Calling for Smart Inverters

[Fierce Energy, Aug. 9] Output of renewable energy systems can change significantly within short periods due to environmental conditions -- like clouds that cover the sun or wind that stops blowing -- causing voltage swings on distribution lines. To realize the potential of renewable energy, the intermittency challenges renewables pose must be addressed. The Western Electric Industry Leaders (WEIL) Group is attempting to do just that. Traditionally, electric utilities have controlled the voltage on electric distribution lines with legacy electromechanical equipment like line regulators and capacitors. However, as the penetration level of PV generation increases, the magnitude and frequency of the voltage swings will become increasingly difficult to control, causing the legacy equipment to operate excessively, requiring additional maintenance and operational costs, and early replacement. One way to mitigate the voltage swings caused by PV systems and manage the voltage within the allowed operating range is to use inverters with enhanced functionality like dynamic reactive power control similar to those deployed in Europe. The WEIL Group is pushing for the installation of "smart inverters" on all new solar generators in the Western region as a cost-effective solution to this intermittency challenge. With more than 100,000 solar arrays already installed in the region, WEIL Group member companies (including Southern California Edison, Salt River Project, Puget Sound Energy, Arizona Public Service, Sacramento Municipal Utility District, Portland General Electric, NV Energy, Pacific Gas & Electric, Xcel Energy and others) have studied this issue extensively and found significant improvement in power quality when smart inverters are placed on the system.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here.

Income Tax Credit Provisions

An investor seeking an income tax credit must document to the ACA the investment was made in either a qualified rural or bioscience company or any other qualified small business. For a qualified bioscience or rural company, the tax credit may total up to 35% of the investment amount over three years; for any other qualified business, the tax credit may total up to 30% over three years. If the tax credits exceed the investor's income tax liability, any unused tax credit amount may be carried forward for up to three taxable years as long as the investor timely claims the credits with Revenue.

The ACA may authorize up to $20 million in tax credits to qualified investors beginning July 1, 2006 through June 30, 2016. The tax credits will be authorized on a first come, first served basis, which is established by the date and time the investor files an application with the ACA. Download the Angel Tax Credit Allocation Table Angel Tax Credit Allocation Table to view the remaining amount of tax credits available. For more detailed information please see below or direct questions to the Program Manager.

Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona.

Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000).

AZ Fast Grant - Technology Commercialization Assistance - ***Next round of grants opening in mid November. This*** competitive grant enables Arizona-based technology companies to initiate the commercialization process. The grant will pay up to $7,500 to provide one or more of the following professional consulting services:

- An expert review of the technology under development to determine if it already exists, is a good candidate for intellectual property protection and is likely to find an attractive market.
- A commercialization feasibility study to identify showstoppers to commercialization before resources are spent commercializing a technology that is unlikely to succeed.
- Other commercialization assistance such as training or preparation for the submission of a federal SBIR/STTR grant application or another acceptable means of technology commercialization.

AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets.

Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. For more detailed information please see below or direct questions to the

Program Manager.

- Healthy Forest - Harvesters, initial processors and transporters of small diameter timber, may receive: Transaction Privilege Tax Exemptions, Use Tax Exemption and New Job Income Tax Credits.

- Job Training Program offers job specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue.

- Quality Jobs Tax Credit Program - Beginning July 1, 2011, this new program provides Arizona income tax credits for companies creating new jobs and investing in Arizona. The credit is valued at up to $9,000 over a 3-year period per each new employee and offers a 5-year carry forward provision for any unused tax credits. Eligibility qualifications are different for rural and metro areas.

- Bonds Administered by the Arizona Commerce Authority.

- Federal Programs

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- Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

- Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- **Sales Tax Exemption for Machinery and Equipment** - Exemptions are available for:
    1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
    2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
    3. Machinery or equipment used in research and development, see ARS 42-5159(B)(14).

  Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
    - Arizona Incentives/Policies
    - Federal Incentives/Policies
    - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Solar, Heliospheric, and INterplanetary Environment – Response due August 21, 2013
- Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) - Response due August 21, 2013
- Clean Energy Manufacturing Innovation Institute- Response due August, 29, 2013
- SBIR/STTR FY 2013 Phase II Release 3 – Response due September 4, 2013
- Advanced Manufacturing Technology Consortia (AMTech) Program – Optional Pre-applications should be received no later than Friday, September 6, 2013. Full applications must be received no later than 11:59 p.m. Eastern Time, Monday, October 21, 2013. Applications received after the deadline will not be reviewed or considered
- Water Sustainability and Climate - Responses due September 10,2013
- FY2013 Economic Development Assistance Programs – Response due quarterly; September 13, 2013
- Manufacturing Technology Acceleration Center (M-TAC) Pilot Projects – Response due by September 23, 2013.
- Bio-refinery Assistance Program – Response due October 31, 2013
- Energy, Power, and Adaptive Systems – Response due November 1, 2013
- Electronics, Photonics, and magnetic Devices - Response due November 1, 2013
- SunShot Initiative - Responses due November 20, 2014
- Solid Waste Management Grant - Response due December 31, 2013
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- Algal Culture Management and Strain Selection Workshop
  August 19-20, 2013 The University of Texas at Austin Austin, TX

- 2013 Tribal Lands and Environment Forum
  August 19-22, 2013 Santa Ana Pueblo, NM

- Waste Conversion Technology Conference & Trade Show,
  September 15-17, 2013 San Diego, CA
- NASEO 2013 Annual Meeting
  September 15-18 Denver, CO
- 2013 SolarPACES
  September 17-20, 2013 Las Vegas, NV
- Energy Environment & Building Conference
  September 24-26, 2013 Phoenix, AZ
- GEA Geothermal Energy Expo 2013
  September 29-October 2 Las Vegas, NV
- Green Fleet Conference & Expo
  October 1-2 Phoenix, AZ
- Arizona Governor's Economic Development Conference
  October 2-4 Flagstaff, AZ
- Solar Decathlon 2013
  Oct. 3-13, 2013 Irvine, CA
- IGSHPA Conference & Expo
  October 9-10, 2013 Las Vegas, NV
- Solar Power International
  October 21-24 Chicago, IL
- Border Energy Forum XX
  November 6-9 San Antonio, TX
- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO
- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA
- Ecobuild America 2013
  December 9-13 Washington, D.C.

2014

- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ
- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ